
POINT REYES LIGHT

Drones to test bird surveys at Tomales Bay

By Christopher Peak

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This year, waterfowl migrating to their winter feeding grounds in Tomales Bay will be tracked by Ravens and T-Hawks, two types of drones operated by the federal government.

From next Monday, Dec. 9, through Friday, Dec. 13, scientists from the United States Geological Survey and the Fish and Wildlife Service will operate “unmanned aircraft systems”—the government’s preferred term—over Tomales Bay to study the ideal height for bird counts.

In previous years, pilots documented waterbirds each January over Tomales Bay, Abbotts Lagoon and Drakes Estero, but the flight has proven to be expensive and dangerous to pilots who must fly low for an accurate survey, said Orien Richmond, a wildlife biologist with U.S.F.W.S. The low flights killed two in a 2010 plane crash in Oregon.

Instead, drones equipped with cameras will fly at various heights and with different levels of magnification to judge the feasibility of future studies by unmanned aircraft.

They also hope to study the ideal height for surveys to increase data accuracy and consistency. The pictures are at the highest quality when aircraft fly low, but birds may be disturbed, resulting in inaccurate counts. At higher levels, though, planes may not be close enough to accurately distinguish between species. The drones will be flying between 75 feet and 400 feet, Mr. Richmond said.

The United States Army gave U.S.G.S. access to 17 Ravens, which resemble model planes that are launched by hand. At a wingspan of 4.5 feet, the Ravens run on battery power for just over an hour and fly at 30 miles per hour. The RQ-16A T-Hawk Gasoline Micro Air Vehicle is a more compact aircraft. Powered by gasoline, the machines can launch vertically, hover and reach speeds of 45 miles per hour.

Each of the aircraft comes with modular parts to allow different cameras, whether for doing night surveys, thermal imaging or regular photography.

The team will scout sites on Monday to find the best location for a launch. Observers from the National Park Service will be on site during the initial mobilization to ensure the launch and landing areas are safe, but the agency is otherwise uninvolved in the project, said John Dell’Osso, the seashore spokesman.

U.S.G.S. and U.S.F.W.S. will not be flying drones through any of the overflight restriction zones in the Gulf of the Farallones National Marine Sanctuary and so did not obtain a permit from the N.O.A.A. Office of National Marine Sanctuaries, said Max Delaney, an ecosystems protection specialist.

The agencies' surveys track ducks, geese, swans and other waterfowl as they migrate, Mr. Richmond said. Drone flights have already been conducted in the Central Valley counties of San Joaquin and Kern and in Ruby Lake in Nevada as part of the same feasibility study, he added.